REMARKS

This paper is filed in response to the office action mailed on December 21, 2004. Claims 2 and 4 have been cancelled; claims 1, 3 and 5 have been amended; claims 6-13 have been added.

Claim 1 stands rejected under 35 U.S.C. § 102(b) or § 102(e) as allegedly being anticipated by either U.S. Patent No. 6,177,320 ("Cho") or U.S. Patent No. 6,723,655 ("Park").

In response, claim 1 has been amended to traverse this rejection. The Patent Office admits that neither Cho nor Park teach or suggest two separate polishing processes, one using boron and the second one using phosphorous to increase the polishing speed of poly silicon with respect to an insulator film and then decrease the polishing rate of poly silicon with respect to the insulator film respectively. Accordingly, in view of the amendments to the claim 1 which include the limitations of non-canceled claims 2 and 4, applicant respectfully submits that all anticipation rejections are now improper and should be withdrawn.

Next, the office action rejects claims 2-5 under 35 U.S.C. § 103 as being unpatentable over Cho and/or Park in further view of U.S. Patent No. 6,284,660 ("Doan").

Applicant respectfully submits that this rejection is improper as no *prima facie* case of obviousness has been established. Specifically, under MPEP §§ 2142 and 2143,

> [t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.

Citing, In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991); *see also* MPEP § 2143-§ 2143.03 for decisions pertinent to each of these criteria.

The first base reference, Cho, discloses the formation of a landing plug in Figs. 4F and 4G. However, the planarization described in Fig. 4F is a "conventional planarization process" as indicated at column 7, line 12. Then, the further polishing of the

conductive layer 112 and dielectric layer 108 as shown in Fig. 4G is again performed using a CMP process. Cho does not teach or suggest using one dopant in the slurry of the first polishing process and a second dopant in the slurry of the second polishing process. Cho merely teaches the formation of a landing plug, not the specific first and second polishing process as recited in amended claim 1. Similarly, Cho teaches nothing about including a dopant in a first slurry to increase the polishing speed of a poly silicon film with respect to an insulator film and then using a second dopant in a second slurry to decrease the polishing speed of the polysilicon film with respect to the insulator film as recited in new claim 6.

Similarly, Park, which is commonly assigned with the present application, merely teaches the formation of a landing plug in Figs. 5-7. However, Park in no way teaches or suggests the modification of polishing slurries with dopant as recited in amended claim 1 and new claim 6. Nowhere in Park is any dopant used in a chemical mechanical polishing process. Nowhere in Park is the concept of adding dopants to slurries taught or suggested.

Therefore, Park and Cho fail entirely to serve as a base reference because neither teaches the manipulation of polishing speeds using dopants.

Doan, on the other hand, is merely cited for the proposition that it teaches the use of various dopants. However, Doan teaches nothing about the use of dopants as additives to CMP slurries.

Therefore, no hypothetical combination of Cho, Park and Doan teaches or suggests the manipulation of polishing speeds using dopants in slurries and therefore no hypothetical combination of these three references teaches or suggests every element of independent claims 1 and 6. Accordingly, no *prima facie* case of obviousness has been established and the obviousness rejections of claims 2-5 are improper and should be withdrawn. For the same reasons, the anticipation rejection of claim 1 based upon Cho and Park is also improper and should be withdrawn as it does not meet the standards of MPEP § 2131.

An early action indicating the allowability of this application is earnestly solicited.

The Commissioner is authorized to charge any fee deficiency required by this paper, or credit any overpayment, to Deposit Account No. 13-2855.

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Respectfully submitted,

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